

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)

Chromepet, Chennai — 600 044.

B.Sc.(CS) - END SEMESTER EXAMINATIONS APRIL-2023

SEMESTER - I

21UCSCT1002 - Digital Computer Fundamentals and Architecture

Total Duration : 2 Hrs 30 Mins.

Total Marks : 60

Section B

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. Convert the following:
a) 1100110 to Octal b) 75_{10} to Hexadecimal, Octal, Binary
c) Add 110101 and 10111
2. Describe Arithmetic Micro operation.
3. How will you apply Division Algorithm for dividing two binary numbers?
4. Draw and explain Asynchronous Data Transfer.
5. Explain JK Flip-Flop with neat diagram.
6. Describe Multiplexer with neat diagram.
7. List the different types of Addressing modes. Explain any three.
8. Write short notes on Cache memory.

Section C

Answer any **THREE** questions ($3 \times 10 = 30$ Marks)

9. Explain Different types of Logic gates with its truth table and symbols.
10. Solve and minimize the following 5 variables SOP using K-map.
 $f(A,B,C,D,E) = \sum m(0,1,6,7,8,9,21,22,23,29,31)$
11. Describe different types of Instruction Format with example.
12. Explain Booth's Multiplication algorithm with flowchart and example.
13. Briefly explain about DMA with neat diagram.
